Name:_____ Date:_____ Period: _____

Constructed Response: System of Equations

1. Richard wants to join 1 of 2 gyms near his home. One gym charges an enrollment fee for joining the gym. Both have monthly membership fees, as shown below:

- SWEAT: $25.00 per month
- Planet Fitness: $120 Flat Fee plus $10.00 per month

A. Calculate the annual cost of the membership at each gym. Show all your work.

fee per month is equivalent to $\frac{\$}{month}$

Sweat: $25 times 12 = $300, $\frac{\$25}{1\,month} \cdot 12\,months = \$300$

Planet Fitness: $130 + $10 times 12 = $250, $\frac{\$10}{1\,month} \cdot 12\,months + 120 = \$250$

B. Write an equation for each gym's membership that describes the relationship between the number of months of membership (x) and the total cost (y).

Sweat: y = 25x
Planet Fitness: y=10x + 120

Answered the question	Computation is correct	Every step in the SHOW section has a matching EXPLANATION
Used a T-Chart	Work is NEAT and CLEAR	
Put a final answer in the box	Appropriate until is included in the answer	
Showed all work		T-CHART
Comments		SHOW / EXPLAIN
		STEP 1 / 1
		STEP 2 / 2
		STEP 3 / 3

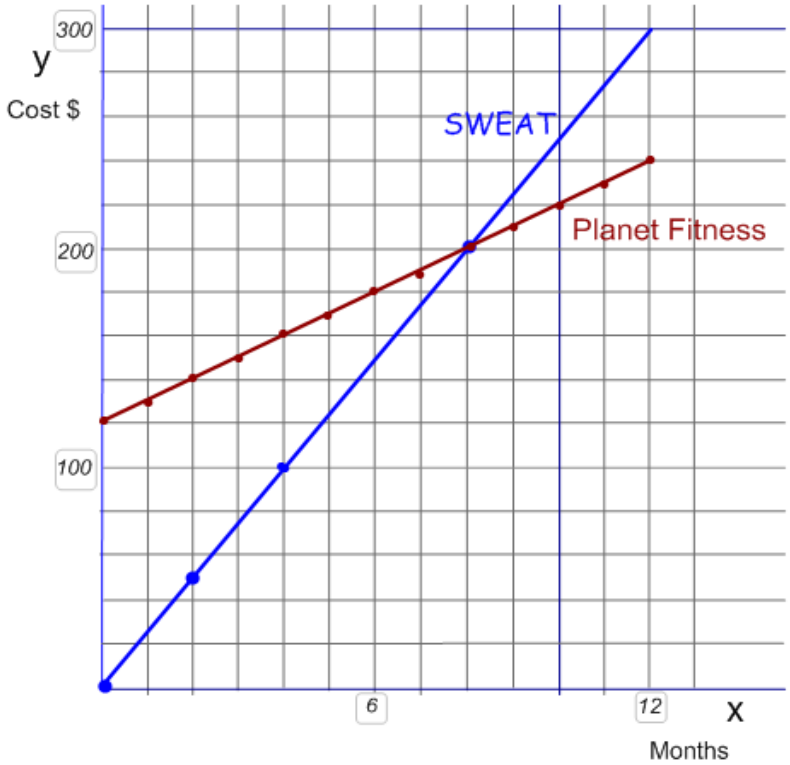
1. Richard wants to join 1 of 2 gyms near his home. One gym charges an enrollment fee for joining the gym. Both have monthly membership fees, as shown below:

- SWEAT: $25.00 per month
- Planet Fitness: $120 Flat Fee plus $10.00 per month

C. Determine the number of months at which the total costs of membership at each gym will be the same amount of money. Show all your work and explain in sentences for each step. **Table**

Month	SWEAT	Total Cost	Planet Fitness	Total Cost
0	$0.00		$120.00	
1	$25.00	$25.00	$10.00	$130.00
2	$25.00	$50.00	$10.00	$140.00
3	$25.00	$75.00	$10.00	$150.00
4	$25.00	$100.00	$10.00	$160.00
5	$25.00	$125.00	$10.00	$170.00
6	$25.00	$150.00	$10.00	$180.00
7	$25.00	$175.00	$10.00	$190.00
8	**$25.00**	**$200.00**	**$10.00**	**$200.00**
9	$25.00	$225.00	$10.00	$210.00
10	$25.00	$250.00	$10.00	$220.00
11	$25.00	$275.00	$10.00	$230.00
12	$25.00	$300.00	$10.00	$240.00

Graph



Substitution

Sweat: y = 25x
Planet Fitness: y=10x + 120

25x = 10x +120
15x = 120

x = 8 months

Subsitute
y=25x
y=25(8)
y=$200.00 (8, 200)

(8 months, Cost $200)